

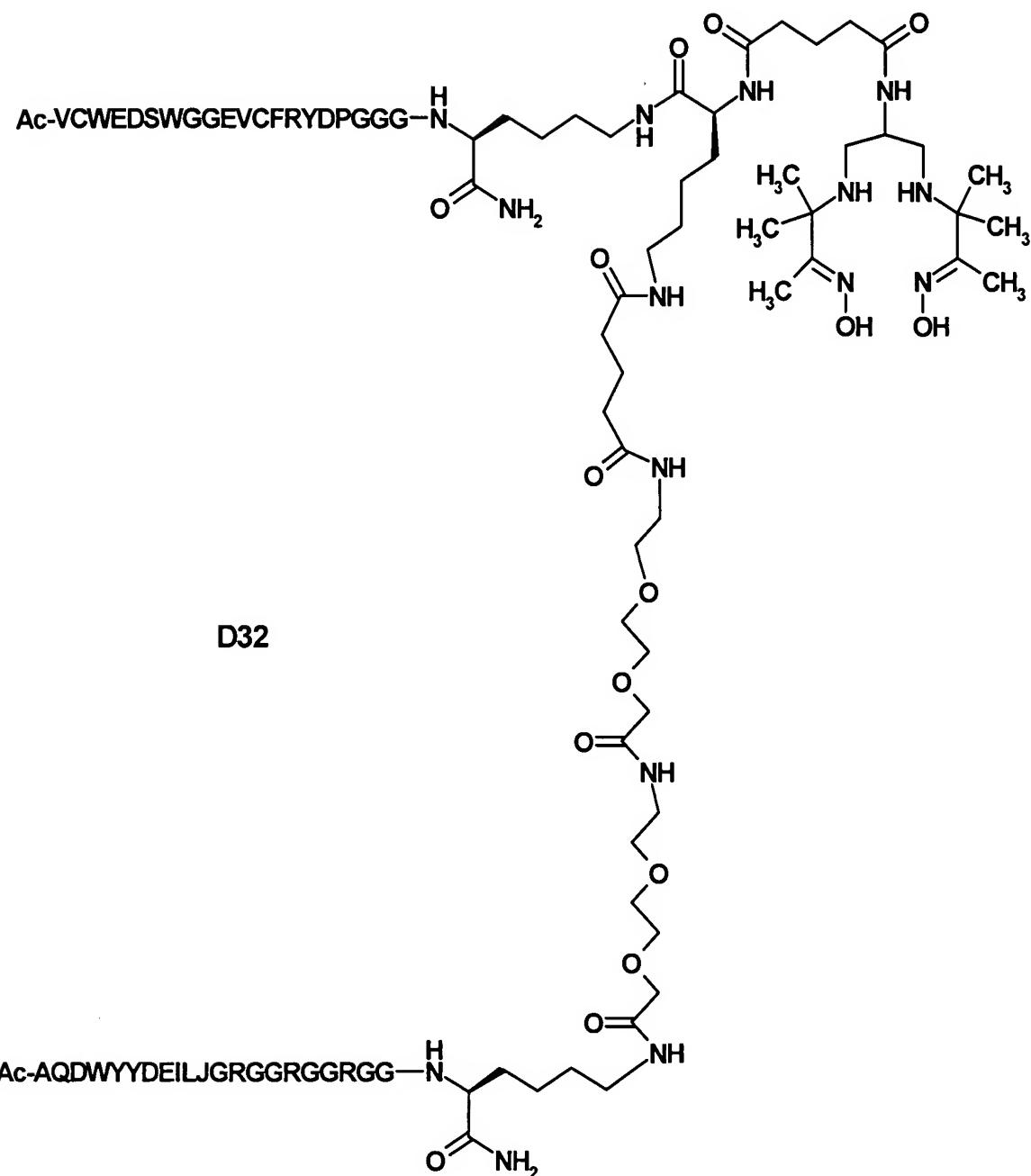
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

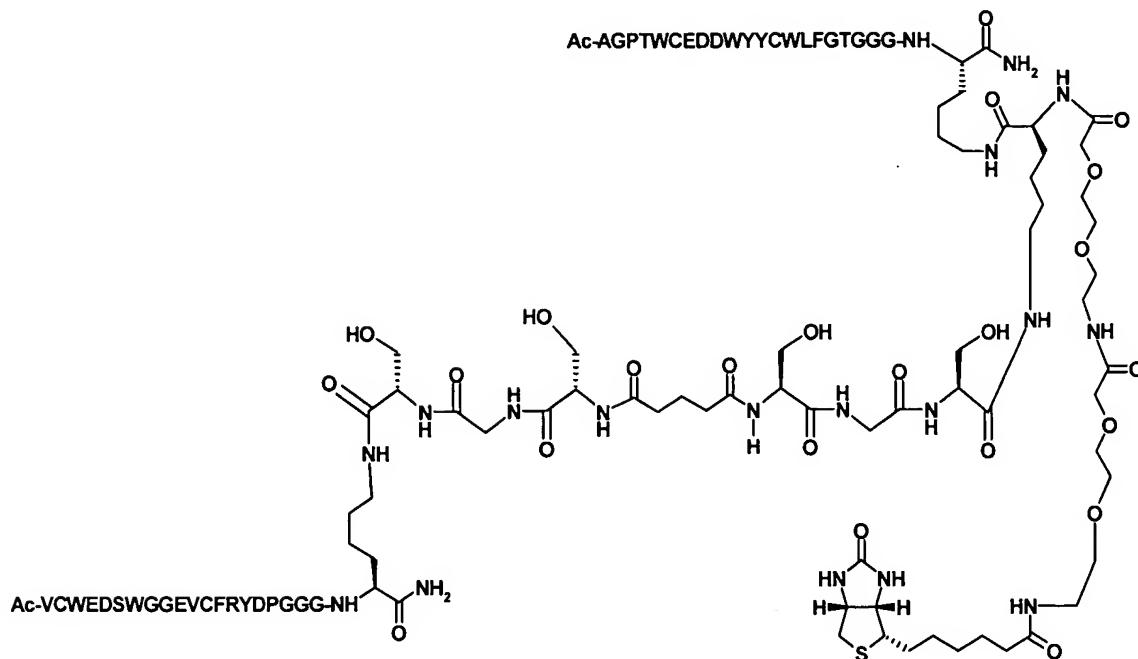
Listing of Claims:

1-65. (Canceled)

66. (Currently amended) A compound comprising a dimer having the following formula:



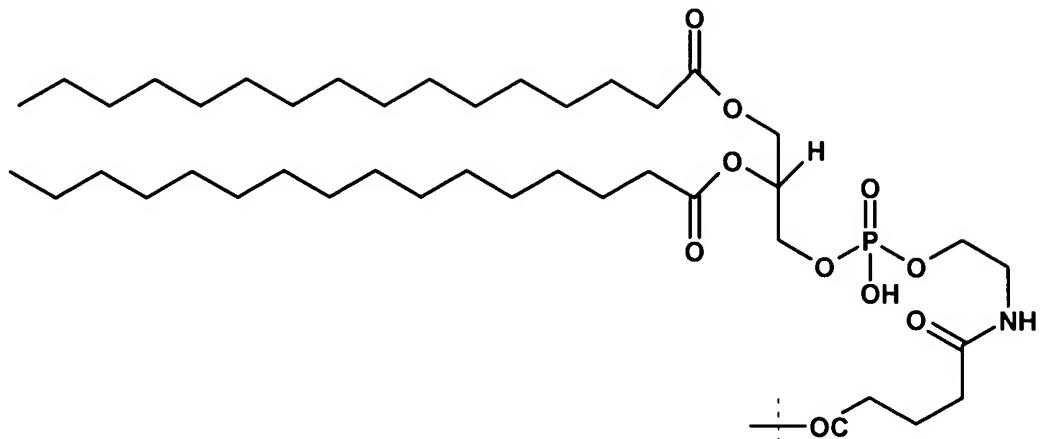
67. (Currently amended) A compound comprising a dimer having the following formula:



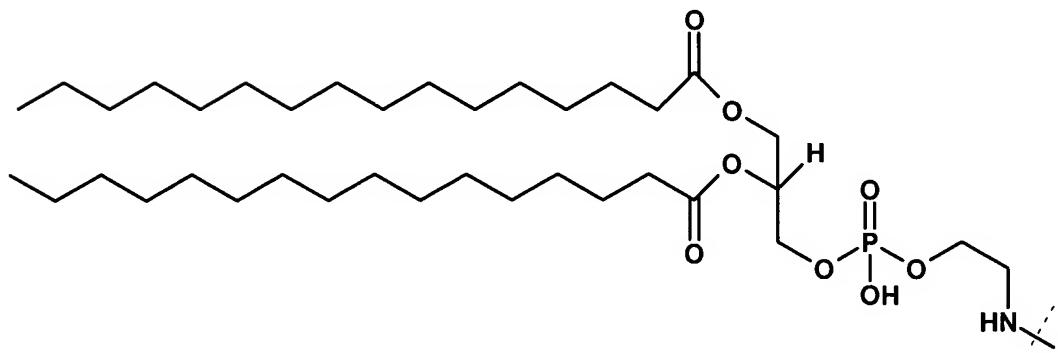
D33.

68. (Previously presented) A diagnostic imaging agent comprising a compound of claim 66 or 67 conjugated to a microbubble or microballoon.

69. (Currently amended) The imaging agent of claim 68, wherein said microbubble or microballoon comprises a phospholipid comprising the formula:



or



70. (Previously presented) The imaging agent of claim 69, wherein said microbubble or microballoon comprises an biocompatible fluorinated gas selected from the group consisting of SF₆, freons, and perfluorocarbons.

71. (Currently amended) A diagnostic imaging method comprising the steps of:

- (a) administering to a patient a pharmaceutical preparation comprising a compound according to claim 66 or 67 conjugated to a detectable label; and
- (b) imaging the compound after administration of the compound to the patient.

72. (Previously presented) The method of claim 71, wherein the imaging step comprises magnetic resonance imaging, ultrasound imaging, optical imaging, sonoluminescence imaging, photoacoustic imaging, or nuclear imaging.

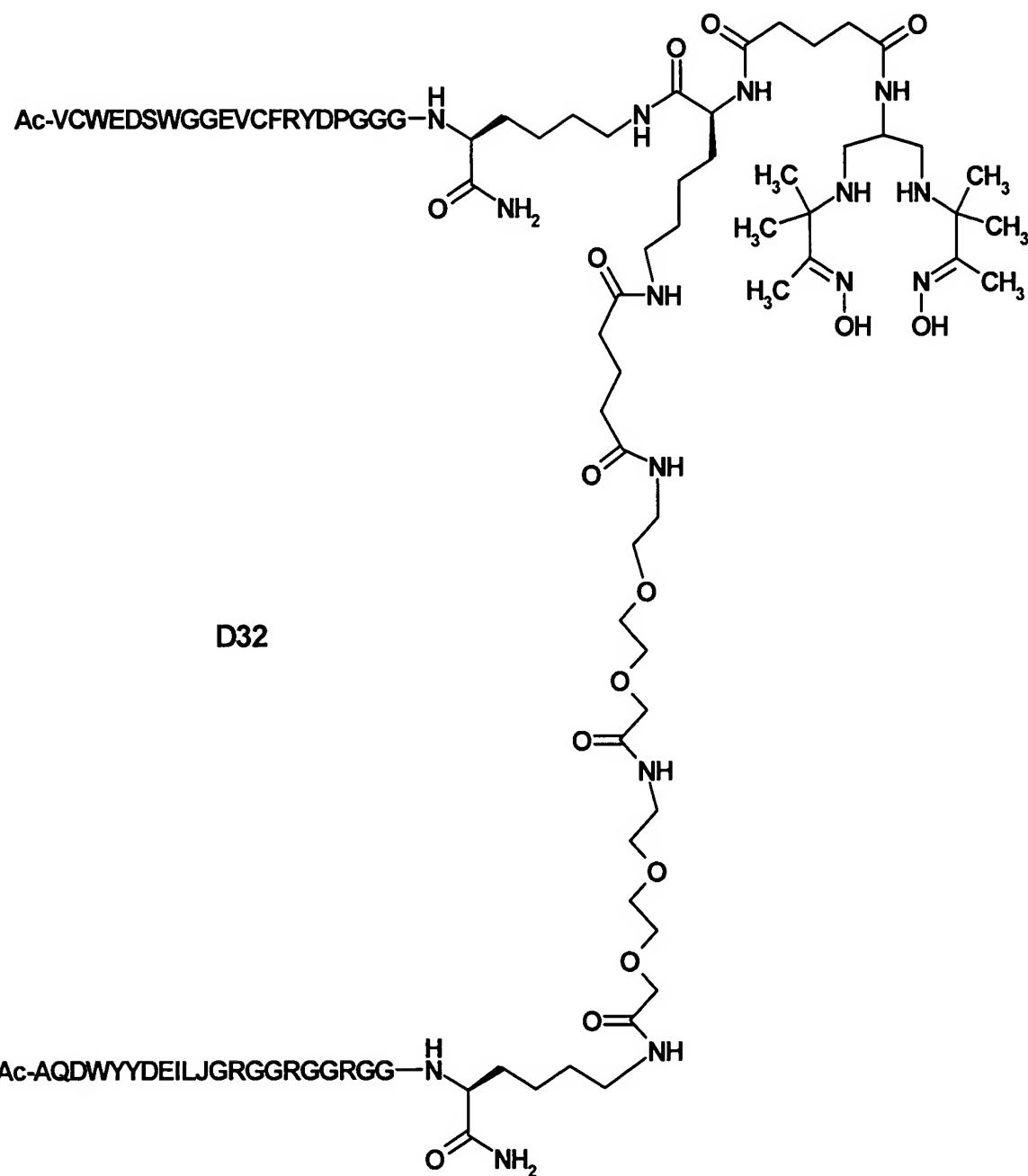
73. (Previously presented) The method of claim 71, wherein the administering step comprises inhaling, transdermal absorbing, intramuscular injecting, subcutaneous injecting, intravenous injecting, or intraarterial injecting.

74. (Previously presented) A method of treating a disease, comprising the step of administering to a patient a pharmaceutical preparation comprising a compound of claim 66 or 67.

75. (Previously presented) A method of treating a disease associated with angiogenesis, comprising the step of administering to a patient a pharmaceutical preparation comprising a compound of claim 66 or 67.

76-110. (Canceled)

111. (Currently amended) A method of synthesizing a multimeric compound comprising at least two binding moieties having specificity for different binding sites on the same target, ~~selected from the group consisting of~~ wherein the compound has the structure of D32:



and D33 wherein the method comprises the steps set forth in Example 9 comprising the following steps:

(a) Treating Ac-VCWEDSWGEGVCFRYDPGGGK[PnAO6-Glut-K]-NH₂ with Disuccinimidyl Glutarate/DIEA/DMF;

(b) Adding Ac-AQDWYYDEIL-Adoa-GRGGRGGRGGK(Adoa-Adoa)-NH₂ to provide D32; and

(c) Purifying.

112. (Canceled)

113. (Previously presented) The compound of claim 66 or 67, further comprising at least one labeling group or therapeutic agent.

114. (Previously presented) The compound of claim 113, wherein the labeling group or therapeutic agent comprises one or more paramagnetic metal ions or superparamagnetic particles, an ultrasound contrast agent, one or more photolabels, or one or more radionuclides.

115. (Previously presented) The compound of claim 114, wherein the paramagnetic metal ion is selected from Mn²⁺, Cu²⁺, Fe²⁺, Co²⁺, Ni²⁺, Gd³⁺, Eu³⁺, Dy³⁺, Pr³⁺, Cr³⁺, Co³⁺, Fe³⁺, Ti³⁺, Tb³⁺, Nd³⁺, Sm³⁺, Ho³⁺, Er³⁺, Pa⁴⁺, and Eu²⁺.

116. (Previously presented) The compound of claim 114, wherein the labeling group or therapeutic agent further comprises a chelator.

117. (Previously presented) The compound of claim 116, further comprising gadolinium (III).

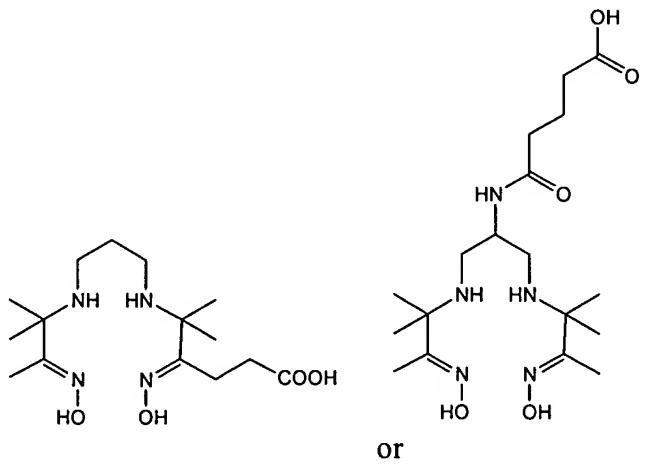
118. (Previously presented) The compound of claim 116, wherein the chelator comprises DTPA, DOTA, EDTA, TETA, EHPG, HBED, NOTA, DOTMA, TETMA, PDTA, TTHA, LICAM, or MECAM.

119. (Previously presented) The compound of claim 116, wherein the chelator comprises diethylenetriamine pentaacetic acid, tetraazacyclododecane triacetic acid, or a carboxymethyl-substituted derivative thereof.

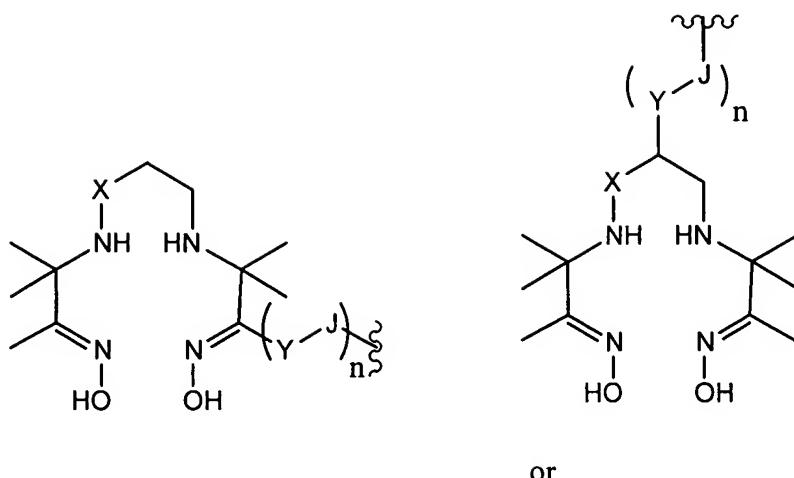
120. (Previously presented) The compound of claim 116, wherein the chelator is 1-substituted 1,4,7,-tricarboxymethyl 1,4,7,10 teraazacyclododecane triacetic acid (DO3A).

121. (Previously presented) The compound of claim 114, where the radionuclide is ^{18}F , ^{124}I , ^{125}I , ^{131}I , ^{123}I , ^{77}Br , ^{76}Br , $^{99\text{m}}\text{Tc}$, ^{51}Cr , ^{67}Ga , ^{68}Ga , ^{47}Sc , ^{51}Cr , ^{167}Tm , ^{141}Ce , ^{111}In , ^{168}Yb , ^{175}Yb , ^{140}La , ^{90}Y , ^{88}Y , ^{153}Sm , ^{166}Ho , ^{165}Dy , ^{166}Dy , ^{62}Cu , ^{64}Cu , ^{67}Cu , ^{97}Ru , ^{103}Ru , ^{186}Re , ^{188}Re , ^{203}Pb , ^{211}Bi , ^{212}Bi , ^{213}Bi , ^{214}Bi , ^{105}Rh , ^{109}Pd , $^{117\text{m}}\text{Sn}$, ^{149}Pm , ^{161}Tb , ^{177}Lu , ^{198}Au or ^{199}Au .

122. (Currently amended) The compound of claim 121, further comprising a compound having a structure selected from the following:



123. (Previously presented) The compound of claim 121, further comprising a compound having a structure selected from the following:



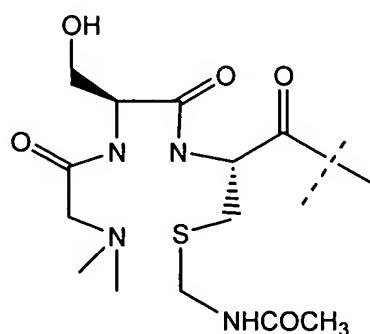
where X is CH₂ or O;

Y is C₁-C₁₀ branched or unbranched alkyl, aryl, aryloxy, arylamino, arylaminoacyl, or aralkyl comprising C₁-C₁₀ branched or unbranched alkyl groups, C₁-C₁₀ branched or unbranched hydroxy or polyhydroxyalkyl groups or polyalkoxyalkyl or polyhydroxy-polyalkoxyalkyl groups;

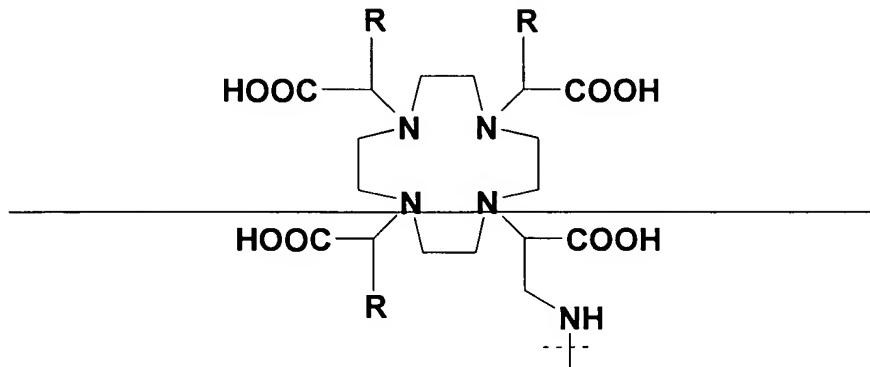
J is C(=O)-, OC(=O)-, SO₂-, NC(=O)-, NC(=S)-, N(Y), NC(=NCH₃)-, NC(=NH)-, N=N-, a homopolyamide or a heteropolyamine derived from synthetic or naturally occurring amino acids;

and n is 1-100.

124. (Currently amended) The compound of claim 121, further comprising a compound having the following structure:

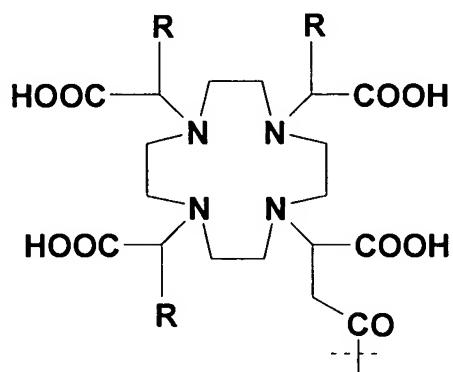


125. (Currently amended) The compound of claim 122 or 123, further comprising ^{99m}Tc , ^{186}Re , or ^{188}Re .



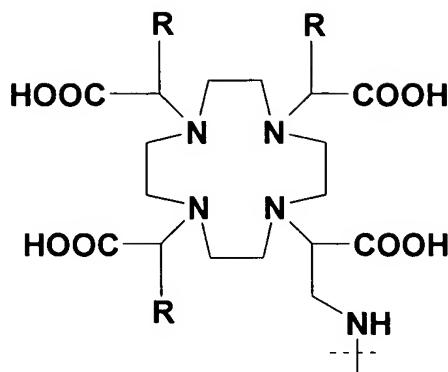
126. (Previously presented) The compound of claim 124, further comprising ^{99m}Tc .

127. (Previously presented) The compound of claim 121, further comprising a compound having the following structure:



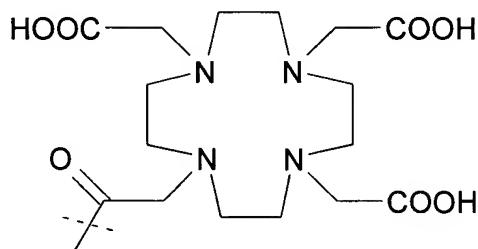
where R is an alkyl group.

128. (Previously presented) The compound of claim 121, further comprising a compound having the following structure:



where R is an alkyl group.

129. (Previously presented) The compound of claim 121, further comprising a compound having the following structure:



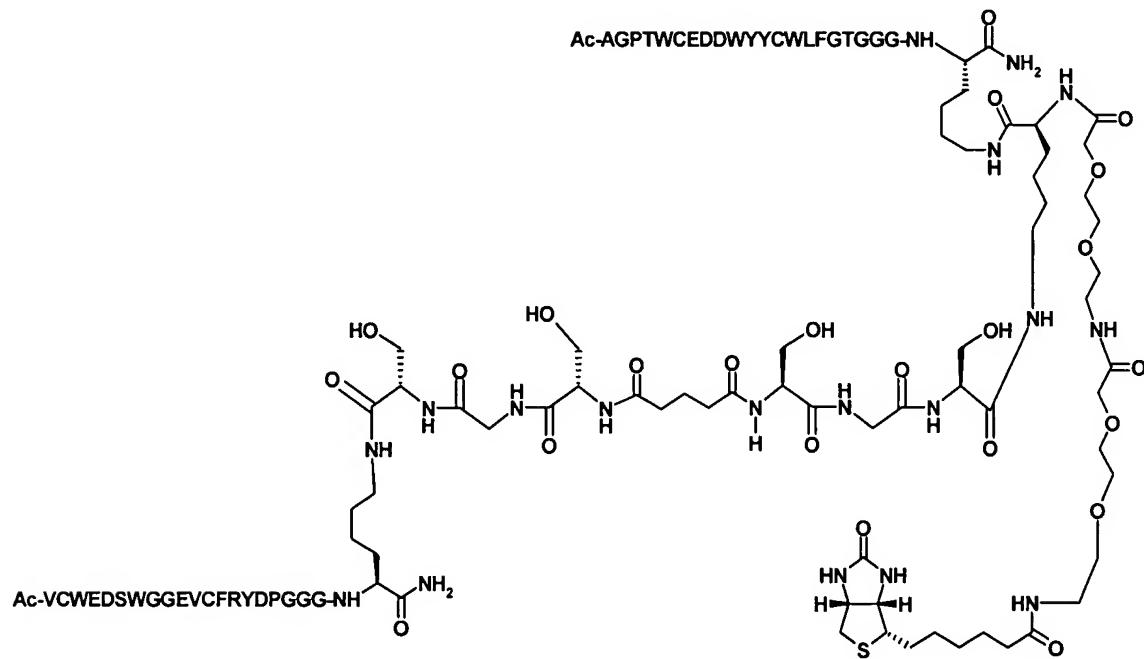
130. (Previously presented) The compound of claim 127, 128 or 129, further comprising ^{177}Lu , ^{90}Y , ^{153}Sm , ^{111}In , or ^{166}Ho .

131. (Previously presented) The compound of claim 113, further comprising a linker between a binding moiety and the labeling group or therapeutic agent.

132. (Previously presented) The compound of 131, wherein the linker comprises a substituted alkyl chain, an unsubstituted alkyl chain, a polyethylene glycol derivative, an amino acid spacer, a sugar, an aliphatic spacer, an aromatic spacer, a lipid molecule, or combination thereof.

133. (Previously presented) The compound of claim 113, wherein the therapeutic agent comprises a bioactive agent, a cytotoxic agent, a drug, a chemotherapeutic agent, or a radiotherapeutic agent.

134. (New) A method of synthesizing a multimeric compound comprising at least two binding moieties having specificity for different binding sites on the same target, wherein the compound has the structure of D33:



comprising the steps of:

- (a) Treating Ac-VCWEDSWGGEVCFRYDPGGK[(SGS)-NH₂] with Disuccinimidyl Glutarate/DIEA/DMF;
- (b) Adding Ac-AGPTWCEDDWYYCWLFGTGGGK(SGS-(S)NH(CH₂)₄-CH(Biotin-JJ-NH)-CO)--NH₂ to provide D33; and
- (c) Purifying.